MATHEMATICS 3201 · NEWFOUNDLAND AND LABRADOR

# Mathematics 3201

## Practice Test

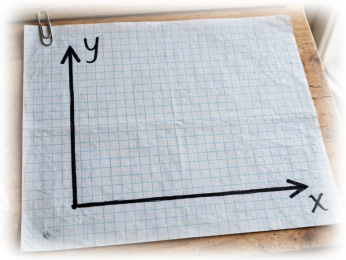
### Unit D: Functions and Polynomial Functions

25 Questions

Original practice test based on the Newfoundland and Labrador curriculum. Work through each question, then check your answers at the end.

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, use the Flag a mistake button to let Brett know so he can fix it.

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Question 1

A polynomial of degree 3 with leading coefficient 2 has end behaviour where, as $x$ approaches positive infinity, $y$ approaches

A) $+\infty$

B) $-\infty$

C) 0

D) 1

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Question 2

If $f(x) = 2x^2 + 3x + 1$, then $f(2)$ is

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Question 3

If $f(x) = 1x^2 + 5x + 6$, then the remainder when $f(x)$ is divided by $x - 2$ is

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Question 4

The factored form with zeros 3 and $-3$ is

A) $(x + 3)(x - 3)$

B) $(x - 3)(x + 3)$

C) $x^2 + 0$

D) $(x - 3)(x - 3)$

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Question 5

The quadratic $x^2 + 2x + 1$ has discriminant $0$. It has

A) one real root

B) two distinct real roots

C) no real roots

D) infinitely many roots

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Question 6

The axis of symmetry of $y = x^2 + 4x + 3$ is, as a value of $x$

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Question 7

The degree of the polynomial $4x^3 - 2x + 7$ is

A) 3

B) 4

C) 2

D) 7

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Question 8

The leading coefficient of $4x^3 - 2x + 7$ is

A) 3

B) 4

C) $-2$

D) 7

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Question 9

A relation is a function when each input has

A) at least two outputs

B) no output

C) exactly one output

D) an output greater than the input

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Question 10

The constant term of $3x^2 - 5x + 8$ is

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Question 11

The graph of an even degree polynomial with a negative leading coefficient falls to the left and

A) rises to the right

B) rises to the left

C) falls to the right

D) is horizontal

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Question 12

The graph of an odd degree polynomial with a positive leading coefficient falls to the left and

A) falls to the right

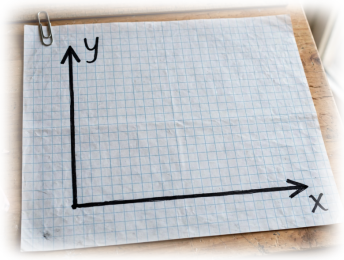
B) rises to the left

C) is horizontal

D) rises to the right

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Question 13

A polynomial of degree 4 with leading coefficient $-1$ has end behaviour where, as $x$ approaches positive infinity, $y$ approaches

A) $-\infty$

B) $+\infty$

C) 0

D) 1

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Question 14

If $f(x) = -1x^2 + 4x + 2$, then $f(2)$ is

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Question 15

If $f(x) = 1x^2 + 7x + 10$, then the remainder when $f(x)$ is divided by $x - 2$ is

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Question 16

The factored form with zeros 2 and 5 is

A) $(x + 2)(x + 5)$

B) $(x - 2)(x - 5)$

C) $x^2 + 7$

D) $(x - 2)(x + 5)$

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Question 17

The quadratic $x^2 + x + 1$ has discriminant $-3$. It has

A) two distinct real roots

B) no real roots

C) one real root

D) infinitely many roots

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Question 18

The axis of symmetry of $y = x^2 + 6x + 5$ is, as a value of $x$

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Question 19

The degree of the polynomial $2x^4 - x^2 + 9$ is

A) 4

B) 2

C) 3

D) 9

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Question 20

The leading coefficient of $-3x^2 + 4x - 1$ is

A) 3

B) 4

C) $-1$

D) $-3$

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Question 21

A polynomial of degree 2 with leading coefficient 5 has end behaviour where, as $x$ approaches positive infinity, $y$ approaches

A) $+\infty$

B) $-\infty$

C) 0

D) 1

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Question 22

If $f(x) = 3x^2 + 2x + 5$, then $f(2)$ is

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Question 23

If $f(x) = 2x^2 + 7x + 3$, then the remainder when $f(x)$ is divided by $x - 2$ is

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Question 24

The factored form with zeros $-4$ and 1 is

A) $(x - 4)(x + 1)$

B) $x^2 - 3$

C) $(x + 4)(x - 1)$

D) $(x + 4)(x + 1)$

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Question 25

The quadratic $x^2 + 5x + 6$ has discriminant 1 . It has

A) one real root

B) no real roots

C) two distinct real roots

D) infinitely many roots

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# ANSWER KEY

| | | | | | |
|---|---|---|---|---|---|
| **1.** | A | **10.** | 8 | **18.** | -3 |
| **2.** | 15 | **11.** | C | **19.** | A |
| **3.** | 20 | **12.** | D | **20.** | D |
| **4.** | B | **13.** | A | **21.** | A |
| **5.** | A | **14.** | 6 | **22.** | 21 |
| **6.** | -2 | **15.** | 28 | **23.** | 25 |
| **7.** | A | **16.** | B | **24.** | C |
| **8.** | B | **17.** | B | **25.** | C |
| **9.** | C | | | | |

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